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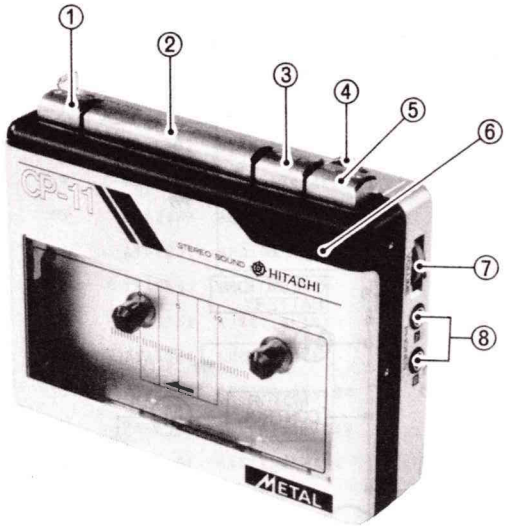
HITACHI

● SERVICE MANUAL

TK | **No. 1887E**

CP-11EX



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KEY TO ILLUSTRATIONS

① STOP/EJECT BUTTON
② PLAYBACK BUTTON
③ FAST FORWARD BUTTON
④ TAPE SELECT SWITCH
⑤ REWIND BUTTON
⑥ OPERATION/BATTERY INDICATOR
⑦ VOLUME CONTROL
⑧ HEADPHONE SOCKETS

SPECIFICATIONS

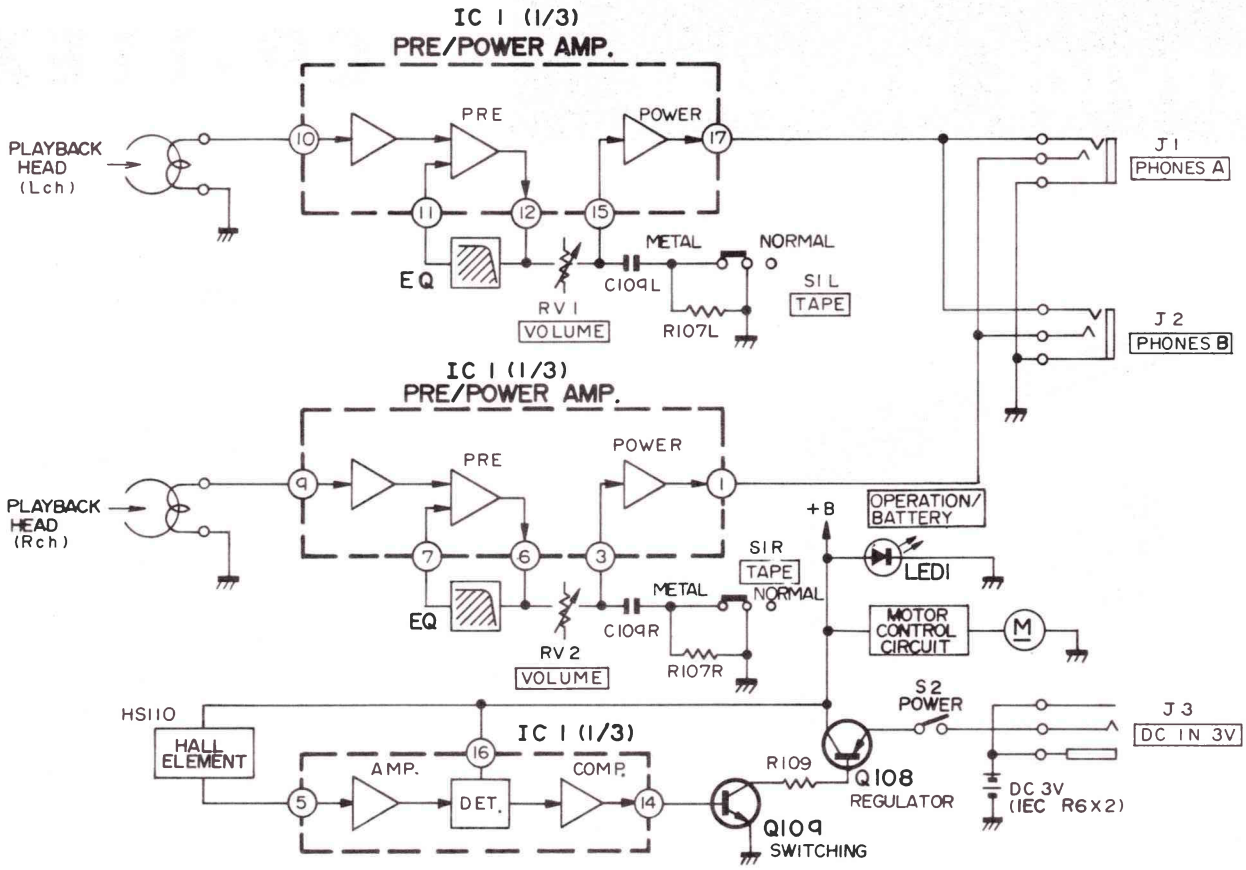
Semiconductors :	ICs : 1 Transistors : 2 LED : 1
Power Supply :	DC : 3V [IEC R6 ("AA" cell) × 2 or equivalent] AC : Use optional AC adaptor (3V)
Power Consumption :	145mA (with no signal)
Power Output :	30mW/CH (T.H.D. 10%)
Tape :	Cassette tape
Track System :	4 track 2 channel stereo
Tape Speed :	4.75cm/s
Frequency Response :	Normal : 40 — 12,000 Hz Metal : 40 — 16,000 Hz
Signal to Noise Ratio :	48 dB
Wow and Flutter :	0.3% (WRMS)
Crosstalk :	Between tracks : 70 dB Between channels : 50 dB
Output Load Impedance :	Headphone : 8 — 300 ohms
Distortion :	3%
Motor :	Electronically controlled DC motor
Fast Forward or Rewind Time :	135 sec. (using C-60)
Dimensions :	112 (W) × 82 (H) × 33 (D) mm
Weight :	310g (with batteries)

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

STEREO CASSETTE PLAYER

Feb. 1983 **TOKAI WORKS**

BLOCK DIAGRAM



DISASSEMBLY

1. Cassette lid

Remove the Ⓐ (two) screws, pull the cassette lid toward you to remove it.

Insert the hinge ass'y between the frame ass'y and the chassis ass'y after applying the cassette bracket to the stopper, and then fix the Ⓐ (two) screws to install the cassette lid.

Install the spring inserting it to the cassette bracket first and the other end to the hole on the frame ass'y.

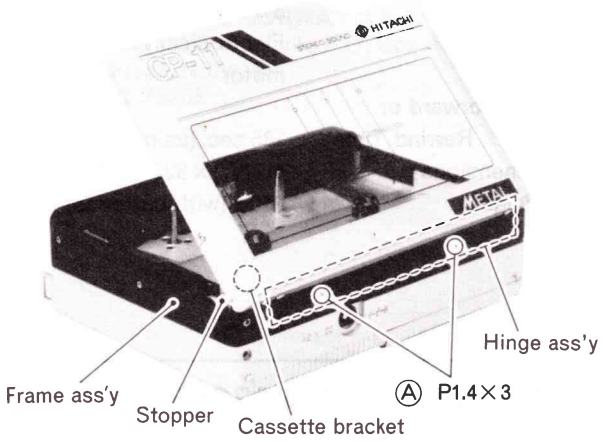


Fig. 1

2. Rear case

After removing the one knob (Tape selector) and battery lid, remove Ⓑ (five) screws.

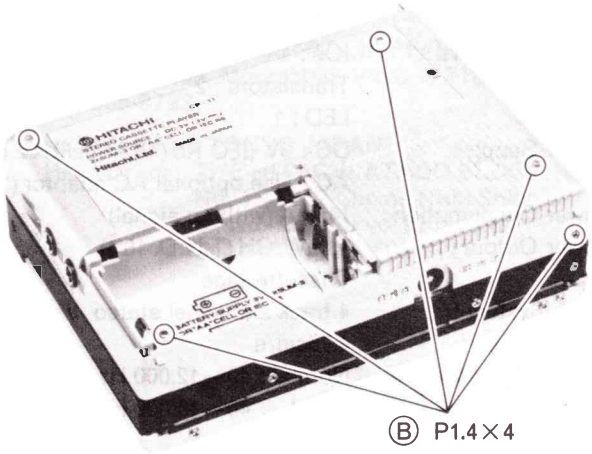


Fig. 2

3. **Main PC board**
Remove Ⓒ (two) screws and open the PC board.

4. **Motor PC board and flywheel supporter**
Remove Ⓓ (two) screws and pull the flywheel supporter in the direction of the arrow.

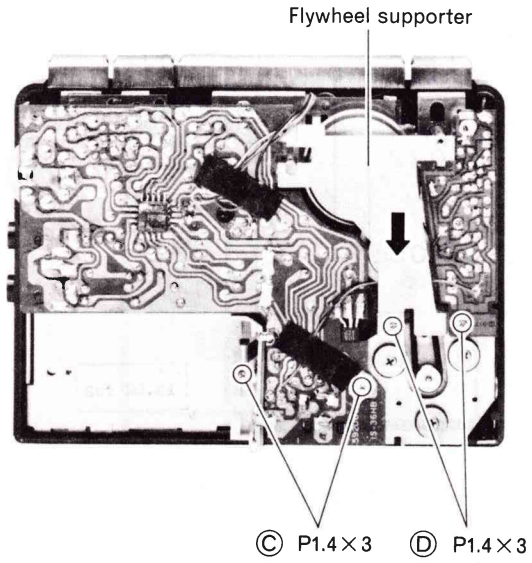


Fig. 3

5. **Cassette chassis**
Remove Ⓔ (four) screws.

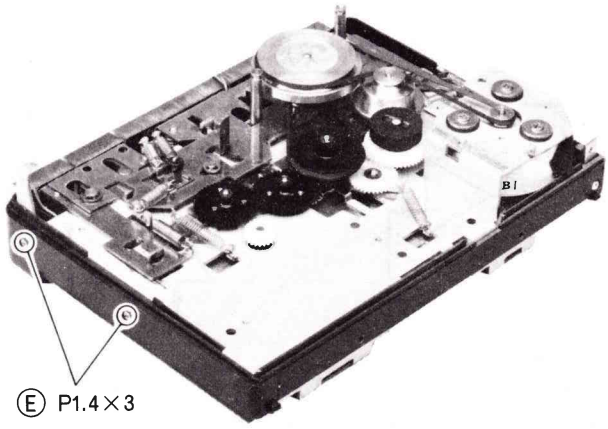


Fig. 4

6. **Decoration metal**
Remove Ⓕ (two) screws.

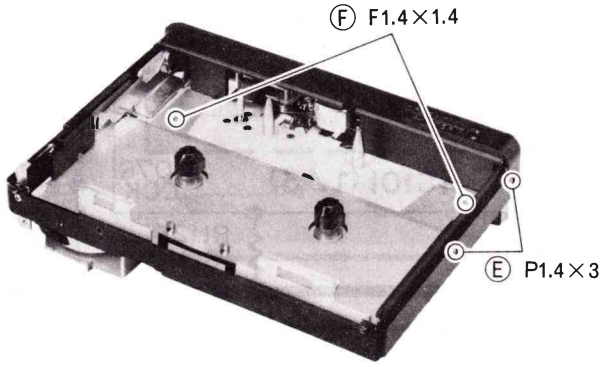


Fig. 5

LUBRICATION

Lubricate one or two drops of oil to rotating point or lubricate grease to sliding point. Lubricate the respective parts listed once every 1000 hours or once a year under normal conditions of use. Avoid oiling them excessively, or rotation may become irregular because of oil splashes.

Lubrication point		Oil or Grease
Rotary section	Metal and metal	Pan motor oil (10W-40)
	Mold and metal	Sonic slider oil (#1600)
Sliding section	Metal and metal	Hitasol (MO-138)
	Mold and mold Mold and metal	White grease (FL-LUBE-A)
Spring resonance prevention		Floil (GB-TS-1)

ADJUSTMENT

Perform the following adjustments in the sequence stated after cleaning the head, pressure roller, and capstan with a head cleaning stick moisted in alcohol.

* Adjust the azimuth of the head with a test tape inserted and the cassette lid open.

Step	Adjustment Item	Measuring Instrument and connection			Check Tape	Mode	Adjusted Position	Adjusted Value	Remarks
		Measuring Instrument	Input Terminal	Output Terminal					
1	Tape speed	· Frequency counter	—	Headphone sockets	Tape speed adjustment tape (3 kHz)	Playback	Semivariable resistor in the motor PC board	3kHz $^{+30}_{-10}$ Hz	Note 1
2	Head azimuth	· VTVM	—	Headphone sockets	Head azimuth adjustment tape(10 kHz)	Playback	Azimuth adjusting screw	Output Max.	Note 2

Note :

1. Adjust within 30 sec. after heat-running for more than 20 minutes.
2. When the maximum values of both channels are different, adjust to the maximum value of the L channel. In this case, the difference between the maximum values of both channels should be within 2 dB.

INSPECTION OF MECHANISM

Item	Checking item		Reference value	Remarks
1	Pressure of pressure roller		180 — 220g	Note 1
2	Tape driving force		60g · cm or more	Fig. 6
3	Take-up torque		30 ~ 65g · cm	
4	Fast forward torque		55g · cm or more	
5	Rewind torque		55g · cm or more	
6	Back tension torque	Take-up	3g · cm or less	
		Supply	3g · cm or less	
7	Button operation force	Play button	1.0kg or less	
		Fast forward button	1.5kg or less	
		Rewind button	1.5kg or less	
		Stop button	1.0kg or less	During play to stop
		Eject button	1.5 kg or less	Without cassette tape
8	Flywheel thrust gap		0.1 ~ 0.3mm	

Note :

1. Set this unit in the playback mode and press the pressure roller in the direction of the arrow using a fan type tension gauge, and measure the pressure when the pressure roller is released from the capstan.

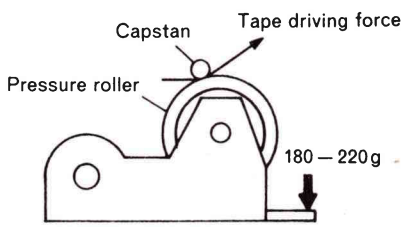
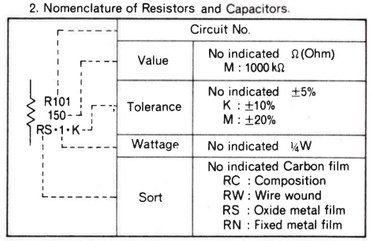


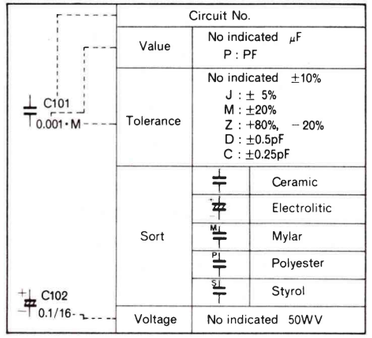
Fig. 6

Note

1. Voltage measured at base of chassis with minimum volume control and no signal.
2. Nomenclature of Resistors and Capacitors.



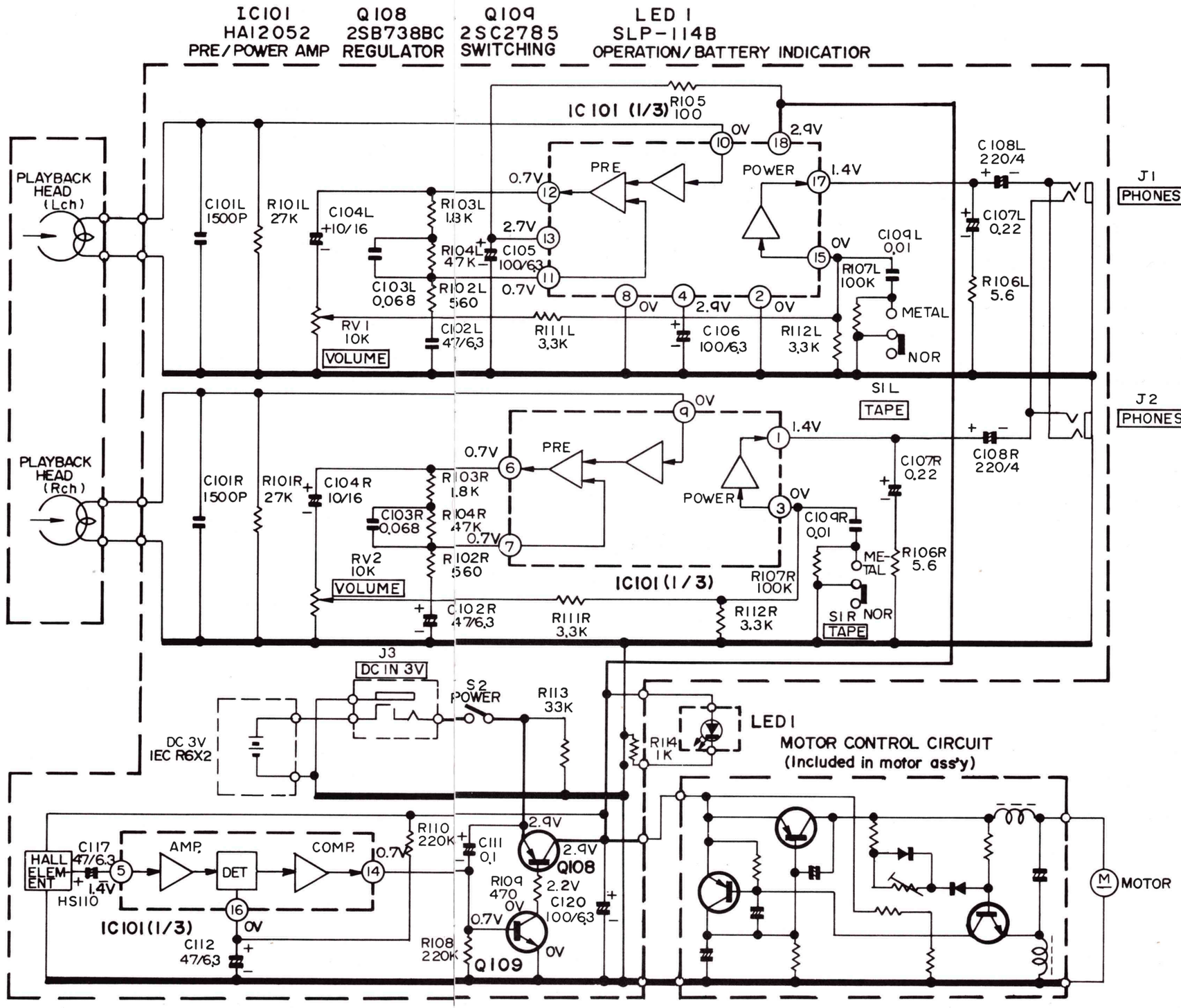
Circuit No.		
	Value	No indicated Ω(Ohm) M : 1000kΩ
	Tolerance	No indicated ±5% K : ±10% M : ±20%
	Wattage	No indicated ¼W
	Sort	No indicated Carbon film RC : Composition RW : Wire wound RS : Oxide metal film RN : Fixed metal film



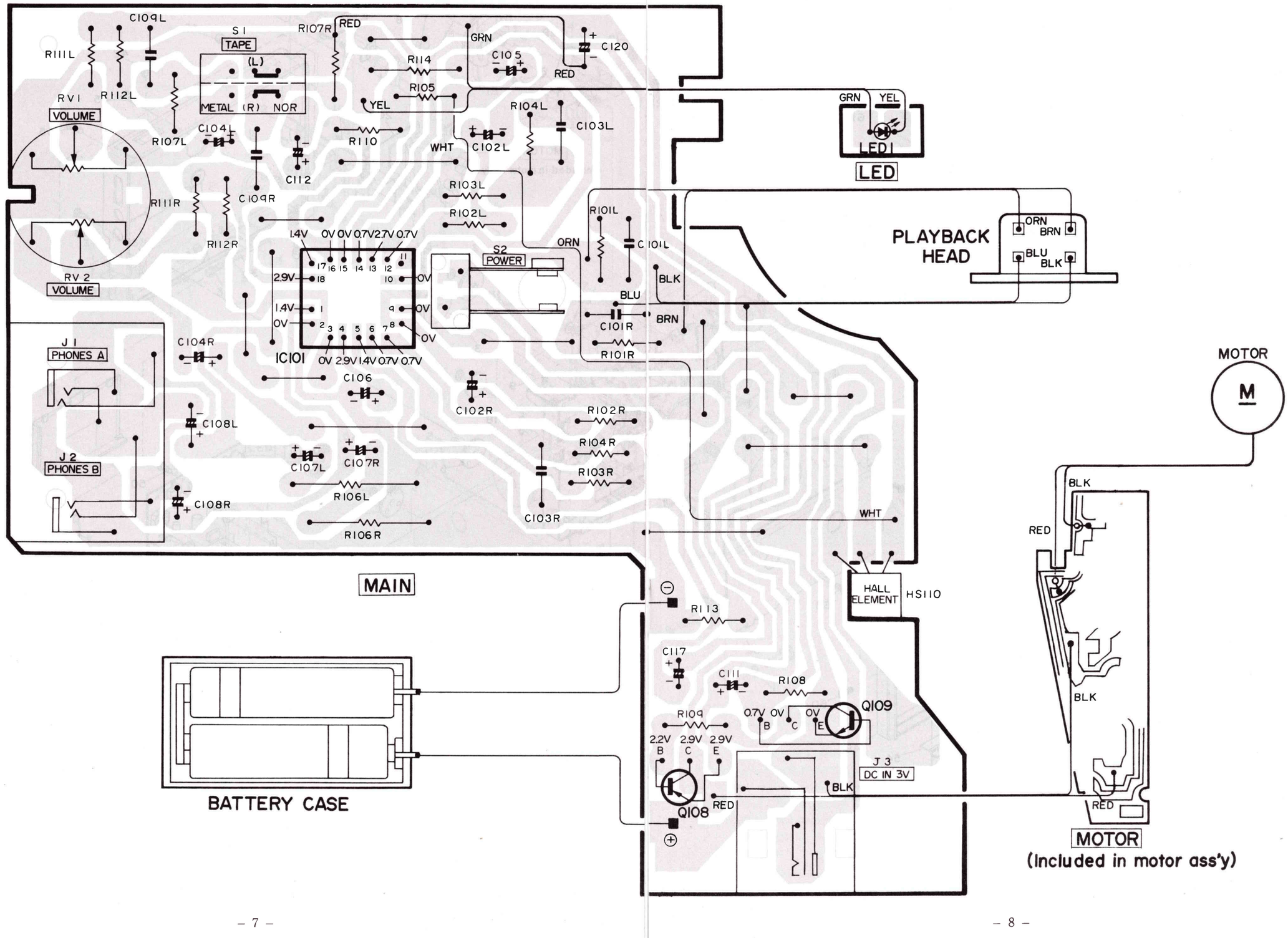
Circuit No.		
	Value	No indicated μF P : PF
	Tolerance	No indicated ±10% J : ± 5% M : ±20% Z : +80%, −20% D : ±0.5pF C : ±0.25pF
	Sort	Ceramic
		Electrolitic
		Mylar
		Polyester
		Styrol
	Voltage	No indicated 50WV

3. Be sure to make your orders of resistors and capacitors with value, voltage, tolerance and sort.
4. When replacing capacitors marked with ※, use specified ones stated on parts list since required temperature characteristics.

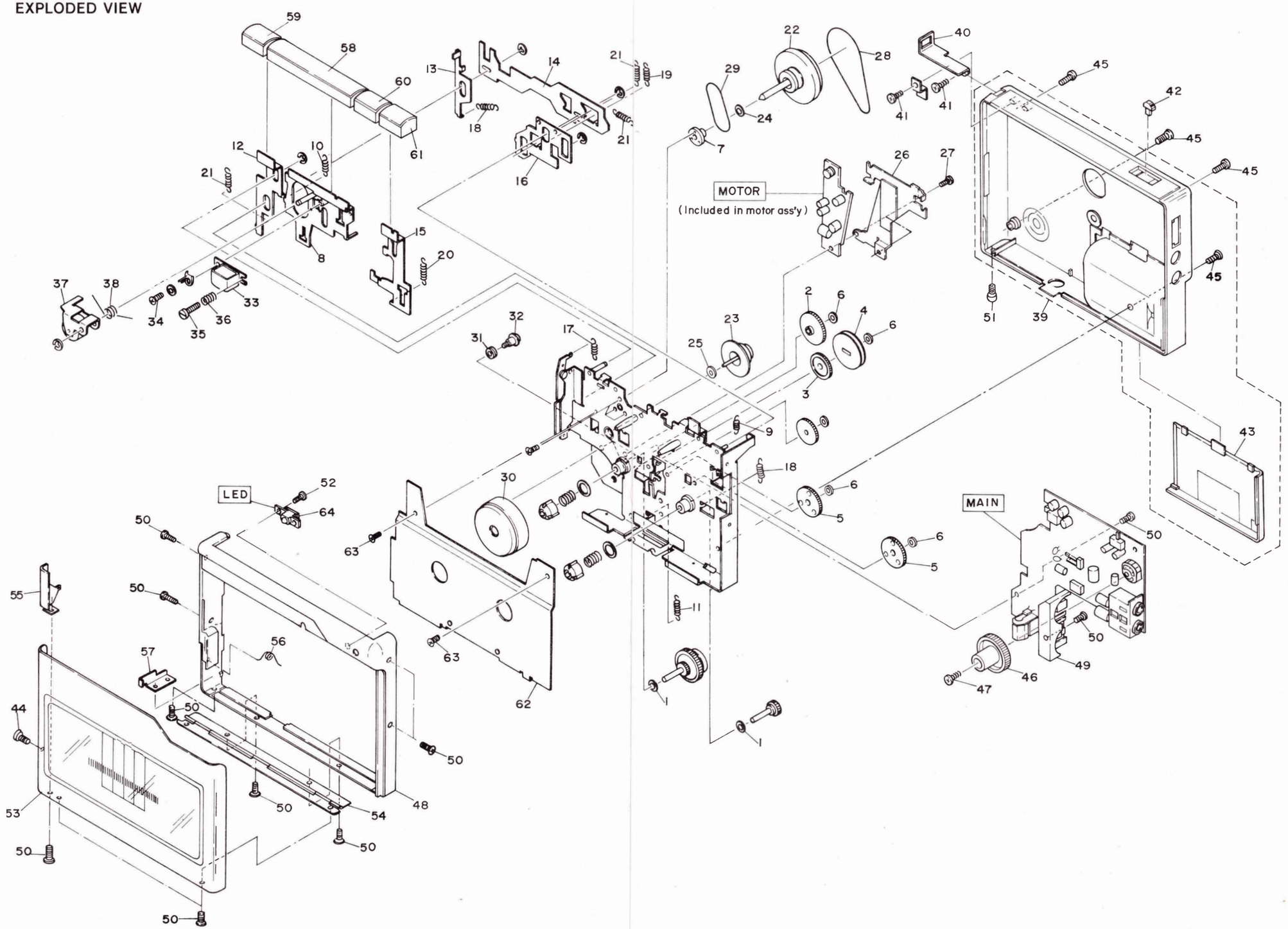
SCHEMATIC DIAGRAM



CIRCUIT BOARD DIAGRAM



EXPLODED VIEW



Note : Components marked without numbers in this drawing are not specified as replacement parts.

REPLACEMENT PARTS LIST

SYMBOL-NO	P-NO	DESCRIPTION
		MECHANISM SP—2C
1	7778855	POLY SLIDER WASHER
2	6431882	PLAY GEAR
3	6431932	MIDDLE GEAR
4	6422733	MIDDLE PULLEY
5	6431893	REWIND IDLER GEAR
6	7787571	WASHER
7	7593292	FLYWHEEL BEARING ASSEMBLY
8	7345282	HEAD PLATE ASSEMBLY
9	6542504	FF PLATE SPRING
10	6542483	PLAY SPRING
11	6542831	SPRING
12	7345351	STOP SLIDER
13	7345332	EJECT SLIDER
14	7345361	LOCK PLATE
15	7345432	REWIND SLIDER
16	7345382	SELECT SLIDER
17	6542491	EJECT SPRING
18	6542512	GEAR SPRING
19	6542474	SLIDER SPRING
20	6542472	SLIDER SPRING
21	6542473	SLIDER SPRING
22	6974091	FLYWHEEL ASSEMBLY
23	6422751	ANTI PULLEY ASSEMBLY
24	7786119	POLY SLIDER WASHER
25	7786211	POLYESTER WASHER
26	7345451	FLYWHEEL SUPPORTING PLATE
27	8712024	PAN HEAD SCREW-1.4MMDX3MM
28	6355521	BELT-1.0MMD
29	6355494	BELT-1.2MMD
30	5577313	DC MOTOR
31	6590271	RUBBER PLATE
32	7782412	SPECIAL SCREW
33	5449171	PLAYBACK HEAD
34	8712024	PAN HEAD SCREW-1.4MMDX3MM
35	7780552	SPECIAL SCREW-2MMDX5MM
36	6520681	HEAD SPRING
37	7345523	PRESSURE ROLLER ARM ASSEMBLY
38	6547673	SPRING
		MISCELLANEOUS
39	6037982	REAR CASE ASSEMBLY
40	7346131	STRAP HOLDER
41	8612002	BT PAN HEAD SCREW-1.7MMDX4MM
42	6292483	SLIDE KNOB (TAPE SELECTOR)
43	6775861	BATTERY LID
44	8712023	PAN HEAD SCREW-1.4MMDX2MM
45	8712025	PAN HEAD SCREW-1.4MMDX4MM
46	6292491	VOLUME KNOB
47	7780901	PAN HEAD SCREW-1.7MMDX4MM
48	6775841	FRAME
49	6771582	BATTERY TERMINAL HOLDER ASSEMBLY
50	8712024	PAN HEAD SCREW-1.4MMDX3MM
51	8712025	PAN HEAD SCREW-1.4MMDX4MM
52	8612002	BT PAN HEAD SCREW-1.7MMDX4MM
53	6094532	CASSETTE LID
54	6337561	HINGE ASSEMBLY
55	7353821	CASSETTE BRACKET
56	6548851	SPRING
57	7353831	STOPPER
58	6059041	BUTTON(PLAY)
59	6059051	BUTTON(STOP)
60	6059052	BUTTON(FF)
61	6059053	BUTTON(REWIND)
62	6635664	DECORATION METAL
63	8722001	FLAT SCREW-1.4MMDX1.4MM
64	6771541	LED HOLDER
		CAPACITORS
C102LR	0256160	ELECTROLYTIC 47MF,6.3V
C104LR	0256155	ELECTROLYTIC 10UF 16V
C105	0256159	ELECTROLYTIC 100UF 6.3V
C106	0256159	ELECTROLYTIC 100UF 6.3V
C107LR	0256362	TANTALUM 0.22MF,25V
C108LR	0256162	ELECTROLYTIC 220MF,4V
C111	0256360	TANTALUM ELECTROLYTIC 0.1MF 35V
C112	0256160	ELECTROLYTIC 47MF,6.3V
C117	0256160	ELECTROLYTIC 47MF,6.3V
C120	0256159	ELECTROLYTIC 100UF 6.3V
		RESISTORS
RV1-2	5008821	VARIABLE RESISTOR 10KOHM(A)
		SEMI-CONDUCTORS
HS110	5391082	DM106A
IC101	5369921	IC HA12052
LED1	5380881	LED SLP-114B
Q108	5323601	TRANSISTOR 2SB738BC
Q109	5323261	TRANSISTOR 2SC2785
		MISCELLANEOUS
J 1-2	5679941	JACK (HEADPHONE)
J 3	5672091	DC JACK
S 1	5623942	SLIDE SWITCH (TAPE)
S 2	5603431	LEAF SWITCH (POWER)
		FOR ACCESSARIES
	5732122	HEADPHONE (HD-11P)
	5732142	HEADPHONE (HD-10P) (HSCC ONLY)
	7753452	SHOULDER BELT
	6108963	CARRYING CASE ASSEMBLY
	5792151	BATTERY CASE ASSEMBLY (HSCC ONLY)